	Work Order ID 60742 Joursday, July 22, 2010 8:18:17 AM										
Item ID:	D205-634-0			Accept				Se	etup Star	t	
Revision ID:				'	18811181 818 18111 88111 88111				Stop	·	
Item Name:	Replacement	Skidtube	1 1891P1 (181 182)							1 128(((8) 6	#### (IB 11#1 IB#1
Start Date: Required Date	7/21/2010 : 8/6/2010	Start Qty: 1.00 Req'd Qty: 1.00	) (0010) (101 101) ) (0010) (101 101)		Cust Item I Customer:	D:					
Reference:							-	p	un Star	·+	
Approvals:	Process Plan:		Date: 10-7-7	Tooling:	Date:			IV.	Sto		18118 (SI IIII 186)
••	QC:		Date:	_ SPC (Y/N):	Da	nte:			510		
Sequence ID/ Work Center	 ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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D2580	Re	v D			·						
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110

CNC Bend 1

CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

Memo

0.00

0.00

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

(K) & MB 10-07-28

**Dart Aerospace Ltd WORK ORDER CHANGES** W/O: **Approval Approval** Qtv Chief Eng / Bv Date QC Inspector PROCEDURE CHANGE Prod Mgr **STEP** DATE Date: 100810 Part No: \_\_\_\_\_\_\_PAR #: \_\_\_\_\_ Fault Category: \_Skidbles \_\_\_\_ NCR: Yes No DQA: \_\_\_\_ Date: 10/08/16 Resolution: \_\_Accepted Disposition: \_\_Use ns i's QA: N/C Closed: WORK ORDER NON-CONFORMANCE (NCR) NCR: 60742 Section B **Corrective Action Approval** Verification **Approval** QC Inspector **Description of NC** Sign & Chief Eng **Action Description** Section C Initial **STEP** DATE Section A Date Chief Eng Chief Eng D.C. Process exceptable. AFT bend heiset is 1.25." MA Distance Form AFT end to 10,00,00 1608-10 10/8/4 1st hale 13.7504 110.1 Pologe R.C. Bendy / Proces

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

#### Work Order ID 60742

Thursday, July 22, 2010 8:18:17 AM



Page 3

Item ID:

D205-634-041

Accept



Setup Start

Stop



**Revision ID:** 

**Item Name:** 

Replacement Skidtube

**Start Date:** 

7/21/2010

QC:

Start Qty: 1.00

Required Date: 8/6/2010

**Req'd Qty:** 1.00



**Cust Item ID: Customer:** 

Reference:

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Process Plan:

Date:\_\_\_\_\_

Date: Tooling:

SPC (Y/N):

Date:

Date:

Run

Start

Stop



Sequence ID/

Work Center ID

140

Skidtubes

Skidtubes

Operation **Description**  Set Up/ **Run Hours** 

Tool # Plan Code

Accept Qty

Reject Qty

Reject Number

Insp. Stamp

Memo

0.00

0.00

1-Weld step D2576 as per Dwg. D2580 and QSJ 004

A/R□□□ Aluminum Rod

Tool ID

2-Prep per QSI 005 and weld crossbolt spacers D2579 as per Dwg, D2580, OSI

For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill A/R□□□ Aluminum Rod

3-Grind welds as per Dwg D2580 Grind flush ridge made from bending

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64 adjust stopper not to hit web.Deburr

5-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

Dart Ae	rospace	e Ltd							¢
W/O:			WO	RK ORDER CHANGE	S				,
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#### Work Order ID 60742

Thursday, July 22, 2010 8:18:17 AM



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Item ID:

D205-634-041

Accept

Tool # Plan

Code

Setup Start

Stop



**Revision ID:** 

Item Name:

Replacement Skidtube

**Start Date:** 

7/21/2010

Start Qty: 1.00

Required Date: 8/6/2010

Req'd Qty: 1.00



**Cust Item ID: Customer:** 

**Tool ID** 

Reference:

Approvals:

Process Plan: \_\_\_\_\_ Date:\_\_\_\_

Memo

Date:\_\_\_\_\_

Tooling:

SPC (Y/N):

Date:

Date:

Run Start

Reject

Qty

Stop



Number Stamp

Insp.

Reject

Sequence ID/ Work Center ID

150

Quality Control

**Operation** Description

QC10- Inspect visual per QS1004- ground welds

Set Up/ **Run Hours** 

0.00

O volos 110

0.00

160

Quality Control

QC5- Inspect part completeness to step on W/O

Accept

Qty

170

QC

HandFinish

Pressure Wash per QSI005 4.3

Memo

0.00

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

W/O:			W	ORK ORDER CHANG	ES				. ,
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#### Work Order ID 60742

Thursday, July 22, 2010 8:18:17 AM



Page 5

Item ID:

D205-634-041

Accept

Setup Start

Stop

Start

Stop



**Revision ID:** 

Item Name:

Replacement Skidtube

**Start Date:** 

7/21/2010

Start Qty: 1.00

Req'd Qty: 1.00 Required Date: 8/6/2010



**Cust Item ID: Customer:** 

Reference:

Approvals:

Process Plan:

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Date:\_\_\_\_\_

Date:\_\_\_\_\_

SPC (Y/N):

Set Up/

Tooling:

**Run Hours** 

**Tool ID** 

Date:

Date:

Tool # Plan

Code

Reject Accept Oty Otv

Run

Reject Number Stamp

Insp.

Sequence ID/ Work Center ID

180

Powdercoat

Powder Coating

Operation Description

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

111115291

0.00

10/08/v

FINISH TIME:

START TIME:

Memo

9:30Am OVEN TEMPERATURE: 320°(7 10:00 Au

190

QC

Quality Control

QC3- Inspect Part Finish

Memo

0.00

0.00

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Thursday, July 22, 2010 8:18:17 AM



Page 6

Item ID:

D205-634-041

Accept



Setup Start

Stop



**Revision ID:** 

**Item Name:** Replacement Skidtube

**Start Date:** 

7/21/2010

Start Qty: 1.00

Required Date: 8/6/2010

Req'd Qty: 1.00



**Cust Item ID:** 

**Customer:** 

Reference:

Approvals:	
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Process Plan: \_\_\_\_

Memo

Date: \_\_\_\_\_

Date:\_\_\_\_\_ **Tooling:** 

SPC (Y/N):

Date:

Date:

Run

Start



Stop



Sequence ID/ **Work Center ID** 

200

HandFinish

Hand Finishing

Operation **Description**  Set Up/ **Run Hours** 

0.00

0.00

Tool ID

Tool # Plan

Accept Code Otv

Reject **Qty** 

Reject Number

Insp. Stamp

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of

Sikaflex on insert holes before installing wearplates 

Sikaflex expire date:

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with

Sikaflex. Clean excess adhesive

Sikaflex expire date: 1101

5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch:

W/O:			ORK ORDER CHANG	ES					e e	
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#### Work Order ID 60742

Thursday, July 22, 2010 8:18:17 AM



Page 7

Item ID:

D205-634-041

Accept

Setup Start

Stop



**Revision ID:** 

Item Name:

Replacement Skidtube

**Start Date:** 

7/21/2010

Start Oty: 1.00

Required Date: 8/6/2010

Req'd Qty: 1.00



**Cust Item ID: Customer:** 

Tool ID

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Date: \_\_\_\_ Date:

SPC (Y/N):

Tooling:

Date: Date:

Run Start

Stop

Sequence ID/ Work Center ID

210

Quality Control

**Operation** Description

QC5- Inspect part completeness to step on W/O

Set Up/ Run Hours

0.00

Code

Tool # Plan

Accept Qty

Reject **Qty** 

Reject Insp. Number Stamp

8 10/08/12 0.00

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for

Foreign objects per OSI 024

W

220

Packaging

Packaging

Memo

Memo

0.00

0.00

60163

Packaging Identify and pack for shipping as per PPPD205-634-041

Location: PPP Rev:

230

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

CZ1018116

W/O:			WC	ORK ORDER	CHANG	ES			**.	
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#### **Picklist Print**

Thursday, July 22, 2010 8:18:20 AM

Work Order ID: 60742

Parent Item:

D205-634-041

Parent Item Name: Replacement Skidtube



**Start Date: 7/21/2010** 

Required Date: 8/6/2010

Page 1

Start Qty: 1.00

Required Qty: 1.00

20 BE 10/08/04

Comments:

IPP Rev:N□02.08.28□FP was QC5 in Step 27; Added QC5 to Step 30□KJ

IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD

IPP Rev. O 06.02.28 Added paperwork EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2580-1		Manufactured	No			110	Each	6.0000	1 		9913	-Mo	10-08
				Location		Loc	<u>Qty</u>	Loc Code		Sec.	PO 0		
				LG	55000		4		_		_		
				_	57028 59297		i 1		_				
				~~~	60379		2						
				ST046			2				_		
D2576-3	,	M C . 1	NI.		59913	1.40	2		_		_		
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				Location		Loc	<u>Qty</u>	Loc Code					
				LG			90					. /	4/ .
					46661 52215		42 48				_ _ BE	10/00	904
D2579	•	Manufactured	No		·	<b>4</b> 140	Each	313.0000	20	20		•	
				<b>Location</b>		Loc	<u>Qty</u>	Loc Code					
				LG			313						

14

290

57052 57348

58433

59113

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Thursday, July 22, 2010 8:18:20 AM

Work Order ID: 60742 Parent Item: D205-634-041 Parent Item Name: Replacement Skidtube Required Date: 8/6/2010 **Start Date: 7/21/2010** Start Qty: 1.00 Required Qty: 1.00 D2855 Manufactured No 200 Each 83.0000 Cap Location Loc Oty Loc Code FP6 56613 ST026 82 50513 50770 28 51539 2 51 53791 AN3-5A Purchased No Each 200 1,128.000 2 MM 10-08-12 Bolt Location Loc Oty Loc Code ST350 1128 105057 628 115016 500 AN960JD10L NAS1149D0332J Purchased No 200 Each 3,021.000 2 Washer 10.08.12 Location Loc Qty Loc Code ST348 3021 110985 3021

Dart Aeı	rospace Lt	d							,
W/O:			W	ORK ORDER CHANG	ES				r
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Work Order ID: 60742  Parent Item: D205-634-041  Parent Item Name: Replacement Skidtube		1116 1111 1111 1111 1111 1111 1111 111		Start Date: 7 Start Qty: 1		Required Date: 8/6/2010 Required Qty: 1.00
ALS7-1032-130 Purch	nased No		200 Each	950.0000 50	50	
A B 114723		Location FP 115079 ST282	<u>Loc Oty</u> 933 933 17	Loc Code		M 10.08.17
AN3C4A Purch	nased No	113238	200 Each	1,520.000 50	50	
	·	Location ST350 114103 114108 114416 114523 114941	Loc Oty 1520 501 14 12 2 991	Loc Code		
	nased No	,	<ul><li>200 Each</li><li>200 Each</li></ul>	0.0000 50	50	M 10. 08. 13
Gasket		Location  FP 53461  FP012  59661 60209	Loc Otv  4 4 31 23 8			M 10 08 12

Dart Aeı	rospace	e Ltd							
W/O:			V	ORK ORDER CHANGE	S				
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Thursday, July 22, 2010 8:18:20 AM

Work Order ID: 60742

Parent Item:

D205-634-041

Parent Item Name:

Replacement Skidtube



Start Date: 7/21/2010 Start Qty: 1.00

Required Date: 8/6/2010

Required Qty: 1.00

D3566-5

Gasket

Gasket

D3566-1

Manufactured No

Manufactured

200

Each

16.0000

Ml 10.08.12

M/ 10.08.12

Location FP015

59158

16

Loc Qty

200

200

200

16 Each

21.0000

Loc Code

Location FP015

> 57715 59126 60202

Loc Qty 21 2

7 12

Each

Loc Code

10.0000

1

2

Wearshoe

D3564-11

Manufactured No

Manufactured

Location FP019

59941

59660

Loc Oty 10 10

19.0000

Loc Code

Loc Code

M/ 10.08.12

M/ 10.08.12

Wearshoe

D3564-13

No

Location FP17

Loc Oty

19 19

Each

Thursday, July 22, 2010 8:18:20 AM

**Shop Packet Print** 

Page 4

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Thursday, July 22, 2010 8:18:20 AM

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Parent Item: D205-634-041									
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D3564-9	Manufactured	No		200	Each	13.0000	1	1	
NVIII SIICE			Location FP	Lo	c Oty 1	Loc Code			M 10.08.12
			55334 FP019 59201		1 12 12				_ _
D3564-5	Manufactured	No		200	Each	16.0000		1	
Wearshoe			<u>Location</u> FG	Lo	c Oty	Loc Code			M 10 08.12
,			34806 FP19		1				
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D2594-3  O-Ring, 205 Skidtube	Manufactured	No		200	Each	443.0000`	16	16	
•			<u>Location</u> FP	Lo	<u>c Otv</u> 443	Loc Code			MI 10.08.12
			55546 58191 59358		19 12 412				

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#### **Picklist Print**

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Work Order ID: 60742

Parent Item:

D205-634-041

Parent Item Name: Replacement Skidtube



**Start Date:** 7/21/2010

16

Required Date: 8/6/2010

Start Qty: 1.00 16

Required Qty: 1.00

D2594-1

Plug, 205 Skidtube

Manufactured	No

200

Each

451.0000

<u>Location</u>	Loc Qty	Loc Code	M 10.08.13
FP	183		
42807	112		<del></del>
55002	71		
FP14	268		
58434	79		
59110	189		

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CHECK	(ED.//	APPROVED	DRAWING NO. REV. D
	T		D2580 SHEET 1 OF 3
DATE			TITLE SCALE
07.0	02.27		205 SKIDTUBE ASSEMBLY NTS
Α		96.09.16	NEW ISSUE •
В		96.12.02	AS MANUFACTURED
С		98.08.26	REDRAWN, INCLUDED DEO 9094/9097
D		07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183

ENGINEERING COPY



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QTY	QTY	Part Number	Description				
-041	-045						
X		D2580-041	SKIDTUBE ASSEMBLY				
	X	D2580-045	SKIDTUBE ASSEMBLY				
1	11	D2500-1-190	EXTRUSION				
11	1	D2576-3	STEP				
20	24	D2579	CROSS BOLT SPACER				
16	16	D2594-1	PLUG				
16	16	D2594-3	O-RING				
11	1	D2596	205 WEB				
1	1	D2855	AFT CAP				
1	1	D3564-5	WEARSHOE				
1	1	D3564-9	WEARSHOE				
1	1	D3564-11	WEARSHOE				
1	1	D3564-13	WEARSHOE				
2	2	D3566-1	GASKET				
1	1	D3566-5	GASKET				
1	1	D3566-13	GASKET				
50	50	ALS7-1032-130	INSERT				
		or AKS7-1032-130	•				
		or AKS4-1032-130					
		or AELS-1032-130	<u> </u>				
50	50	AN3C4A	BOLT				
2	2	AN3-5A	BOLT				
50	50	AN960C10L	WASHER				
2	2	AN960JD10L	WASHER				

#### **GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:

SEE NOTES ON PAGE 2 FOR D2580-041 AND

PAGE 3 FOR D2580-045

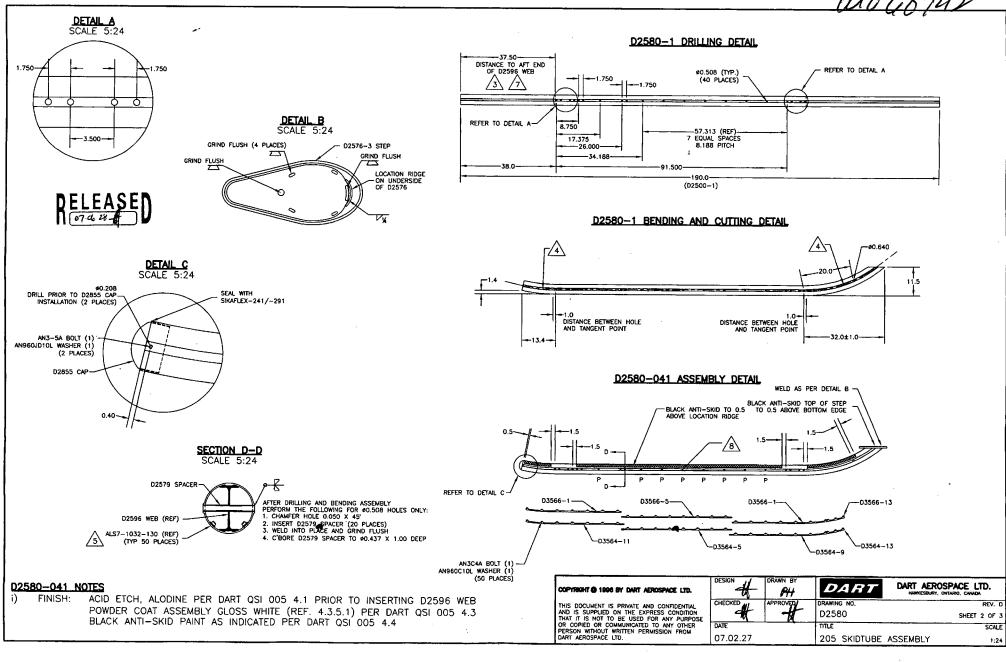
 INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES									
DATE	STEP	PRO	CEDURE CHA	NGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
,											
									,		
									,		
Part No	•	PAR #:	Fault Cate	gory:	NCR: Yes	No <b>DQ</b>	<b>A</b> :	Date:			
	R	esolution:	Disposition: Q		QA: N/C C	QA: N/C Closed: [			_ Date:		
NCR:		V	WORK ORDI	ER NON-CONFORMA	NCE (NCF	₹)					
DATE	STEP	Description of NC	Initial	Corrective Action Section Action Description	on B		cation	Approval	Approval		
		Section A	Chief Eng	Chief Eng	Date		on C	Chief Eng	QC Inspector		
	1							1			
		, *									
		,									
		, .									

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W/O:		WORK ORDER CHANG	ES				K.
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
					1		
Part No	 ):	PAR #: Fault Category:	NCR: Yes	No <b>DQ</b>	A:	Date:	

Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_

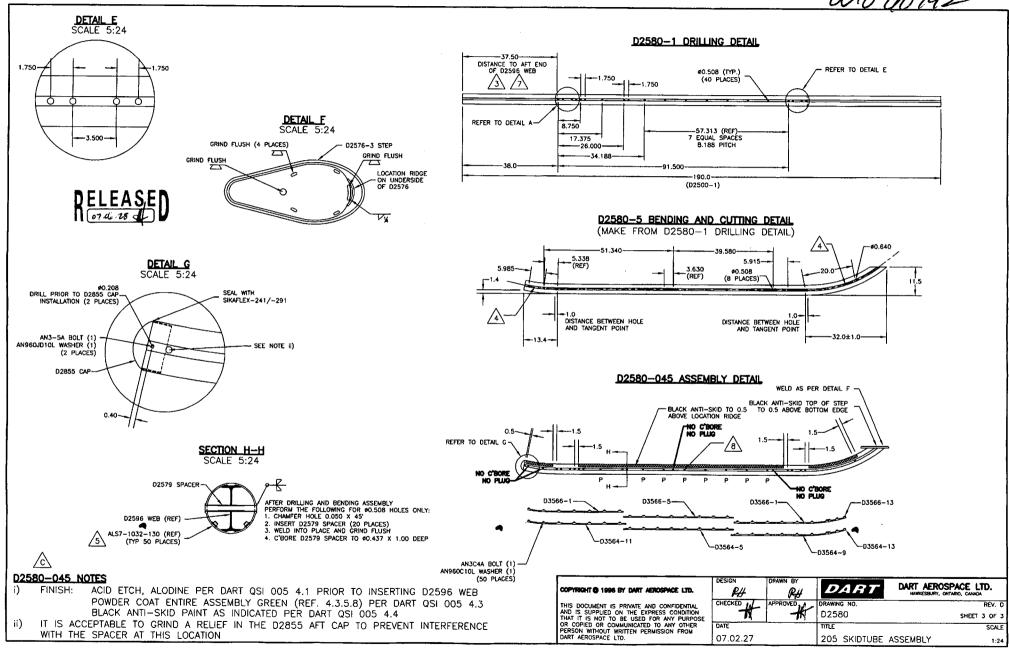
Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)								
		Description of NC	Corrective Action Section B		Verification	Approval	Annual			
DATE	DATE STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Approval Chief Eng	Approval QC Inspector		
					2					
		•								
		Water Control of Management Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Contr								

NOTE: Date & initial all entries

Resolution: \_\_\_\_

Wo 60742



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W/O:				WORK ORDER (	CHANGES				41.2
DATE	STEP		PRO	OCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No	o:		PAR #:	Fault Category:	NCR: Y	es No <b>DG</b>	A:	Date: _	
	B	Resolution:		Disposition:	ΩΔ· Ν/Ο	: Closed:		Date:	

NCR:		WORK ORDER NON-CONFORMANCE (NCR)								
		Description of NC	Corrective Action Section B			Verification	A	A = = = = = = = = = = = = = = = = = = =		
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Approval Chief Eng	Approval QC Inspector		

NO. <u>232</u>

# AWS D17.1.2001 QUALIFICATION TEST RECORD

Name: Baclay Elliott	
Job number: 59105	_
Part number: <u>D205-634-041</u>	
Description: 805 skid tube	_
Welding Process: Tig[   Mig[ ]	_
Base materiel: Aluminian	
Current: AC[/] DC[ ]	

# TEST REQUIREMENTS AND RESULTS

pass[] fail[] pass[] fail[]
pass[/ fail[] pass[/ fail[] pass[/ fail[] pass[/ fail[] pass[/ fail[] pass[/ fail[]
Date of Test Coupon 10.06.01  Date of Test Coupon 10.06.01

The above named individual is qualified in accordance with AWS D17.1.2001 to weld